

$$7. \left[(x+7)^{1/2} + 5(x-3)^{1/2} \right] = 0$$

$$\left(\frac{41}{12} + 7 \right)^{1/2} - 5(x-3)^{1/2}$$

$$\left((x+7)^{1/2} \right) = (-5)(x-3)^{1/2}$$

$$x+7 = 25(x-3)$$

$$\begin{array}{r} 1x + 7 = 25x - 75 \\ -25x \quad -25x \end{array}$$

$$\frac{-24x}{-24} = \frac{-82}{-24} = \left(\frac{41}{12} \right) ?$$

$$CK (x+7)^{1/2} + 5(x-3)^{1/2} = 0$$

$$\left(\frac{41}{12} + 7 \right)^{1/2} + 5 \left(\frac{41}{12} - 3 \right)^{1/2} = 0$$

6. $\neq 0$

no solution

$$8. \quad 4\underline{(-3x)^{\frac{1}{2}}} - 2 = 3$$

$+2 \quad +2$

$$4(-3x)^{\frac{1}{2}} = 5$$

$$\frac{4(-3x)^{\frac{1}{2}}}{4} = \frac{5}{4}$$

$$\left((-3x)^{\frac{1}{2}}\right) = \left(\frac{5}{4}\right)^2$$

$$\cancel{-\frac{1}{3}} \cdot -3x = \frac{25}{16} \cdot \cancel{-\frac{1}{3}}$$

$$x = \frac{-25}{48} \quad \text{ck} \quad \checkmark$$

$$9. \left(\sqrt[4]{\frac{1}{3}x - 6} \right) = (5)^4$$

$$\frac{1}{3}x - 6 = 625$$

$+6 \qquad \qquad \qquad +6$

$$\cancel{3} \cdot \cancel{\frac{1}{3}}x = 631.3$$

$$x = 1893 \checkmark$$

$$\sqrt[4]{\frac{1}{3}(1893) - 6} = 5$$

Solve each equation. Check for extraneous solutions.

1. $2|2x + 11| - 7 = 3$

4. $|3x + 2| = 5$

2. $\sqrt[3]{x + 40} = -5$

5. $\frac{1}{3}\left|1 - \frac{1}{5}x\right| = 1$

3. $(x^2 + 5)^{1/2} = x + 3$

6. $3(x + 1)^{1/3} = 48$

$$7. -3|2x - 5| = 12$$

$$10. \sqrt{6x - 5} + 10 = 3$$

$$8. -2|6x - 9| + 8 = -4$$

$$11. \left| \frac{1}{3}x + 7 \right| + 9 = 13$$

$$9. -2\sqrt[5]{3x - 1} + 4 = 0$$

$$12. 4|6x - 5| + 3 = 31$$